Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte MICHAEL J. BERRY

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Appeal No. 1999-2674
Application No. 08/192,979

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ON BRIEF

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Before COHEN, McQUADE, and NASE, Administrative Patent Judges.
COHEN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 59 through 75. These claims constitute all of the claims remaining in the application.

Appellant's invention pertains to a method of reshaping an outside surface of a cornea of an eye. A basic understanding of the invention can be derived from a reading of exemplary claims 59 and 73, copies of which appear in "APPENDIX 1" to the main brief (Paper No. 21).

As evidence of obviousness, the examiner has applied the documents listed below:

Neefe	3,776,230	Dec. 04, 1973
Baron	4,461,294	Jul. 24, 1984
L'Esperance, Jr.	4,665,913	May 19, 1987
Sand	4,976,709	Dec. 11, 1990

The following rejections are before us for review.

Claims 59 through 63, 67, 68, and 71 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sand in combination with L'Esperance and Neefe.

Claims 64 through 66, 69, 70, and 72 through 75 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sand in combination with L'Esperance and Neefe, as applied above, further in view of Baron.

The full text of the examiner's rejections and response to the argument presented by appellant appears in the answer (Paper No. 22), while the complete statement of appellant'S

argument can be found in the main and reply briefs (Paper Nos. 21 and 23).

OPINION

In reaching our conclusion on the obviousness issues raised in this appeal, this panel of the board has carefully considered appellant's specification and claims, the applied teachings,[1] and the respective viewpoints of appellant and the examiner. As a consequence of our review, we make the determinations which follow.

We do not sustain the examiner's respective rejections under 35 U.S.C. § 103.

[1] In our evaluation of the applied prior art, we have considered all of the disclosure of each document for what it would have fairly taught one of ordinary skill in the art. See In re Boe, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966). Additionally, this panel of the board has taken into account not only the specific teachings, but also the inferences which one skilled in the art would reasonably have been expected to draw from the disclosure. See In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

Each of independent claims 59 and 73 set forth a method of reshaping an outside surface of a cornea of an eye comprising, inter alia, engaging an outside surface of the eye surrounding the cornea with a coupler structure that also contacts the
outside surface of the cornea with a concave surface, with the

concave surface being transparent to infrared radiation, passing infrared radiation through the concave surface of the coupler and into the cornea in order to raise the temperature of collagen tissue within the cornea sufficiently to shrink the tissue without damaging an endothelium layer of the cornea, and urging the concave surface of the coupler against the outside surface of the cornea during or while infrared radiation is passed therethrough.

The underlying disclosure describes a part of the coupler 10 as an annular suction ring 20 (Fig. 1; specification, pages 12 and 13) whose purpose is to attach the coupler to the eye by use of vacuum to position and restrain the eye. In light of this disclosure, we comprehend the recitation of the urging

step in the claims as denoting the application of a force to position the coupler against the outside surface of the cornea during the passing of infrared radiation. It is also worthy of noting that the second indicated major functional part of the coupler 10 is the substantially transparent center portion 11 that has the radially curved surface or corneal engaging surface 30, which

surface performs the functions of acting as a heat sink and thermostat, a template for the cornea, and a mask during the reshaping procedure (specification, page 13).

We turn now to the evidence of obviousness.

This panel of the Board certainly appreciates the relevance of the Sand disclosure in describing laser keratoplasty to effect collagen shrinkage in a human cornea for bringing about shape modification thereof in correcting refractive disorders. Sand also teaches a lower surface temperature for corneal layers anterior to the stroma produced by flowing insert gas or liquid over the cornea during irradiation or by applying a contact lens window of a material

such as saffire which has a high thermal conductivity. However, as appropriately acknowledged by the examiner (answer, page 3), the Sand reference as whole is clearly deficient in a number of ways relative to the method now claimed.

To overcome the recognized deficiencies, the examiner relies upon the respective teachings of L'Esperance, Neefe, and Baron.

Individually, the teachings of these documents do have some relevance to aspects of the claimed method.

L'Esperance (column 2, lines 14 through 24) addresses an ablative decomposition apparatus for fixing the position of an eye with respect to a scanning laser to effect a desired depth of ablation as a sculpturing step to arrive at a desired ultimate surface change in the cornea. As seen in Fig. 2 of L'Esperance, an eye-retaining fixture is disclosed having a hollow annulus and a wall 23 of air-permeable material

contoured to engage and retain the eye via a scleral-corneal region by the application of vacuum (column 3, lines 42 through 52). Like appellant (main brief, pages 13 and 14), we perceive that the L'Esperance teachings lacks the now claimed concave surface of the coupler which is urged against the outside surface of the cornea and through which infrared radiation is passed.

The patent to Neefe relates to a method of correcting refractive error of the eye by applying heat and drugs to soften the cornea thereby allowing the cornea to be reshaped. In

particular, the rearrangement of the cornea is brought about by pressure applied to the cornea by a heated metal or plastic concave mold which establishes a desired corneal curvature.

Simply stated, when we set aside in our minds that which appellant has taught us in the present application, we readily conclude that the applied prior art, in and of itself, would not have suggested the method of claims 59 or 73. It is quite apparent to us that only by impermissibly relying upon

appellant's own teaching would one having ordinary skill in the art have been able to derive the claimed method based upon the examiner's evidence of obviousness. Clearly, the art before us would not have been suggestive of the claimed coupler with a concave surface that is transparent to infrared radiation, which concave surface is urged against the outside surface of the cornea during the passage of infrared radiation through the concave surface. As a concluding point, we note that the patent to Baron does not make up for the deficiencies of the Sand, L'Esperance, and Neefe disclosures.

The decision of the examiner is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

REVERSED

IRWIN CHARLES COHEN Administrative Patent Judge	)	
JOHN P. McQUADE Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JEFFREY V. NASE Administrative Patent Judge	)	

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